

PATENT SPECIFICATION

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COMPLETE SPECIFICATION

Improvements in or relating to Amusement apparatus

I, ALFRED JAMES LITOLFF CROMPTON, a British subject, of 32, Clarence Avenue, Cliftonville, Margate, Kent, formerly of 8, Granville Marina, Ramsgate, Kent, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates to amusement apparatus and particularly to indoor amusement apparatus for amusement arcades and similar places. More especially the invention concerns apparatus of the general kind which requires the insertion of a coin or token (referred to hereinafter simply as a coin) before it can be played upon and is adapted to return the coin or a number of coins in the event of a "win" being registered.

According to the present invention there is provided amusement apparatus comprising a disc mounted to rotate about a horizontal axis in a surround closing the circumferential edge of the disc, a plurality of radial channels in said disc having their mouths opening through the edge of the disc and being closed at their other ends, a coin-receiving slot adapted to release a coin above said disc and means for directing said coin at random so that it either falls "on edge" on the periphery of the disc and passes into a channel, or alternatively, into a coin-receiving box for retention in the apparatus, and means actuated when any one of said channels is filled with coins for discharging the coins in that channel to a position accessible to a person playing on the apparatus.

To enable the invention to be clearly understood a preferred embodiment thereof will now be described by way of example with reference to the accompanying drawings wherein:—

Figure 1 is a front view of the apparatus with a closure door removed.

Figure 2 is a rear view.

Figure 3 is a fragmentary view taken on the line III—III of Figure 1 and drawn to a larger scale, illustrating contact-actuating means and coin discharge means; and

Figure 4 is a view taken on the line IV—IV of Figure 3.

Referring to the drawings, the apparatus comprises a box-like structure 1 in which is mounted a slowly rotatable power driven disc 2. This disc 2 is formed with a plurality of shallow radial channels 3 which are of different depths, that is from the periphery of the disc towards the centre of rotation, and the inner ends 4 of these channels 3 are closed.

The upper part of said box-like structure 1 is fitted with a coin chute 5 for the reception of coins "C" inserted by a player and the lower end of this chute discharges the coins at a position above the uppermost part of the periphery of said disc 2. As the coins "C" fall from said chute they first strike a spinner 6 and then strike and bounce on a member of horizontal pins 7 on the inner face of the front wall of the box-like structure so that a coin is directed at random towards the periphery of the disc 2. The coin will either enter the open mouth 3a of a channel 3 or, if it misses same, it will be guided through coin-ways 8 directly into one or more coin-receiving boxes 9 and not subsequently returned to a player. The arrangement is such that a coin is more likely to enter a channel 3 than to pass to a coin-receiving box 9 so that the machine will pay out a large proportion of the coins inserted into it. The coins when they enter a channel 3 assume a line formation as shown in Figure 1 in which they are disposed edge to edge in the same plane. Any rejected coins are returned to a player through a coin return chute 5a.

The outer end of each channel 3 adjacent the periphery of the disc 2 is formed with a

transparent window 10 through which can be observed a number, picture, or any other suitable insignia, for example, the photograph of a film star or sports personality.

5 The front of the disc 2 is covered by an opaque disc 11 in which the windows 10 are formed, the purpose of this opaque disc being to prevent players seeing which channels are nearly full with coins so that they cannot
10 deliberately attempt to fill these channels. It is to be pointed out that the lines of overlapping coins indicated at 12 on this disc 11 are merely decorative printed matter on the disc and should not be confused with
15 the coins "C".

During the course of play a line of coins "C" will build up in each of the various channels 3 until eventually a channel becomes full of coins and the last inserted coin will
20 blank out or darken the number or picture normally displayed in the window 10 at the outer end of that particular channel 3. When this happens a trip mechanism is actuated as hereinafter explained which will release the
25 entire line of coins in that channel and deliver them to the player. Conveniently, the numbers visible through the windows 10 can indicate the different numbers of coins which can be contained in the different channels 3.

30 Certain of the channels 3 may be of the same depth and any suitable combination of different length channels may be employed. One suitable arrangement comprises two channels 3 capable of receiving a line of six
35 coins "C", three channels capable of receiving five coins, four channels capable of receiving four coins, five channels capable of receiving three coins and six channels capable of receiving two coins.

40 The means for releasing the line of coins "C" in a full channel (that is one in which the number or picture is blanked out) comprises a cylindrical cage-like structure which is rotatable with and about the same horizontal
45 axis as the disc 2 and this cage comprises substantially parallel rods 13 (Figures 3 and 4) which are also parallel with the axis of rotation of the cage and the ends of these rods 13 adjacent to the disc 2 co-act with
50 pusher members 14 slidable in radial slots 15 which open through the inner closed ends 4 of the channels 3. These rods 13 are adapted to swing or rock slightly in holes through which they pass in a disc 13b located
55 approximately mid-way between their ends and the rear ends 13a slidably engage in radial grooves 16 in a disc 17 fixed to a shaft 18 on which the disc 2 is also fixedly mounted. The disc 17 is driven by a belt
60 18 from an electric motor mounted in the cabinet. The disc 17 forms part of a pulley 17a driving a belt 17b for driving the spinner 6. Such an arrangement results in the cage and the disc 2 and the spinner 6 being rotated
65 in unison from a common drive.

Assuming a channel 3 is not full of coins "C" the pusher member 14 can be moved freely by an associated rod 13 and will push the coins slightly towards the mouth 3a of the channel due to the fact that the end 13a of the rod 13 remote from the disc will contact and be displaced by a spring loaded contact closing blade or arm 19 later referred to. Should, on the other hand, a channel 3 be full of coins a rod 13 will not be able to
70 displace its associated pusher member 14 and the rod 13 then becomes a fixed abutment and will co-act at its other end 13a consecutively with the contact-closing arm 19 and a second contact closing arm 20 controlling two
75 switch mechanisms 21 and 22 respectively and will move said arms 19 and 20 instead of being displaced by them to effect (a) lighting up of an indicator (23) (Figures 1 and 2) showing a win sign and (b) to close
80 a circuit to a solenoid 24 (Figure 3) which will actuate a spring loaded shutter mechanism 25 to release the coins in the full channel when the latter assumes a lowermost position (that is at six o'clock on the disc) so
85 that the coins will fall by gravity into a pay out chute 26 and become accessible to the player.

The periphery of the disc 2 adjacent to the mouth 3a of each channel 3 is fitted with a bracket 27 which co-acts with a pivoted catch 28 carried by a bracket 29 on the coin-release shutter 25 and retains the shutter open (i.e., with its limb 25a clear of a channel
90 mouth) a sufficient time when a win occurs, to ensure that the coins "C" in said channel 3 will all be released before the shutter 25 closes which it does do before the mouth 3a of a following and only partly filled channel registers with said shutter 25.
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It will be appreciated that the coins "C" in the channels 3 of the upper part of the disc will move by gravity towards the inner ends 4 of the channels and that the coins in the channels of the lowermost part of the
100 disc 2 will tend to fall downwardly and outwardly towards the mouth 3a of a channel but they are retained in said downwardly directed channels by reason of the fact that the outermost coin in each of these channels rolls against a track 30 which surrounds the lower half of the disc 2.
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The means for actuating the first switch 21 for indicating a win comprises the contact-closing blade or arm 19 which is fulcrumed at 19a between its ends and is loaded by a spring 19b at one side of the fulcrum 19a so that the other side of the arm is spring urged against said rods 13 and will move them inwardly when the channels 3 are not full of
110 coins. The arm 19 is shaped to provide a cam-like surface 19c which co-acts with the rods 13 and when a rod becomes a fixed abutment when a channel is full of coins the rod 13 will not yield and swings the bar 19
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against its spring loading 19b to close the contacts 21 to illuminate the win sign 23. During a very slight continued movement of the cage, the said rod 13 which is fixed, engages and swings the second and similar arm 20 to close the second pair of contacts 22 to operate the coin release shutter 25.

This second arm 20 is similar to the arm 19 and is mounted on a fulcrum 20a; is loaded by a spring 20b and is formed with a cam portion 20c which co-acts with the rods 13. When the arm 19 is actuated, the tendency is for the arm 20 to swing up under the influence of its spring 20a but this movement is limited by a catch or step 31 on the arm 19. The engagement of the arm 20 with the step 31 also acts to hold the arm 19 in a contact closing position until the arm 20 is swung down by the fixed rod 13 to operate the shutter mechanism whereupon the lower end of the arm 19 is released and this arm can swing away from the contacts 21 to allow them to open.

The coin release shutter 25 comprises a hinged plate formed at its free end with a lateral flange forming the part 25a which constitutes a part of the track 30 against which the outermost coins roll so that by swinging this shutter 23 the track portion 25a thereof is moved to one side of the track 30 and enables the coins to be released.

The box-like structure is housed in a cabinet which is lighted internally by a lamp 32 (Figure 2) to give a well diffused light which will shine through the transparent windows 10 for the numbers or pictures at the outer ends of the channels 3 so that the picture of a winning channel will become darkened by the last coin which falls into that channel.

WHAT I CLAIM IS:—

1. An amusement apparatus comprising a disc mounted to rotate about a horizontal axis in a surround closing the circumferential edge of the disc, a plurality of radial channels in said disc having their mouths opening through the edge of the disc and being closed at their other ends, a coin-receiving slot adapted to release a coin above said disc and means for directing said coin at random so that it either falls "on edge" on the periphery of the disc and passes into a channel, or alternatively, into a coin-receiving box for retention in the apparatus, and means actuated when any one of said channels is filled with coins for discharging the coins in that channel to a position accessible to a person playing on the apparatus.

2. Apparatus according to claim 1 wherein the channels are of different depths (i.e., from the periphery of the disc towards the centre thereof) so that different channels can contain different numbers of coins.

3. Apparatus according to claim 1 or 2

wherein the means for directing a coin at random on to the periphery of the disc comprises a spinner and a plurality of spaced apart horizontal pins against which a coin is caused to strike so as to be deflected as it falls towards the periphery of the disc.

4. Apparatus according to any of the preceding claims wherein the outer end of each channel adjacent the periphery of the disc is formed with a transparent window through which can be viewed an illuminated number or picture which is blanked out by the last coin to fill a channel.

5. Apparatus according to any of the preceding claims wherein the means actuated when any one of said channels is filled with coins comprises a member which is slidable into a closed end of the channel when the latter is not full, said member being connected to a contact operating rod adapted to be retained in an operative position when said member will not yield and slide into the channel when the latter is full, the contacts controlling electrically operated means for discharging coins from a filled channel.

6. Apparatus according to claim 5 wherein the contact operating rods for the channels are supported in a cylindrical cage-like form and so that each rod can rock about a point between its ends so that one end thereof can move with its associated slidable member when a channel is not filled with coins, the said cage of rods being rotatable so that the rods co-act successively with a spring-loaded contact moving blade or arm, the rods yielding to said blade when the slidable members are free to slide into the channels and being held rigid when a slidable member is held against movement by the coins in a full channel so as to cause the blade to move against the influence of its spring loading and close said contacts to operate electrically controlled means for discharging the coins from the filled channel.

7. Apparatus according to claim 6 or 7 wherein the electrically controlled means for discharging coins from a filled channel comprises a shutter constituting a part of a track forming the surround closing the lower part of the circumferential edge of the disc.

8. Apparatus according to claim 7 wherein the periphery of the disc adjacent to the mouth of each channel is fitted with means which co-acts with the shutter to ensure that the latter is kept open a sufficient time to allow all the coins from a channel with which said means is associated to be discharged before the shutter closes.

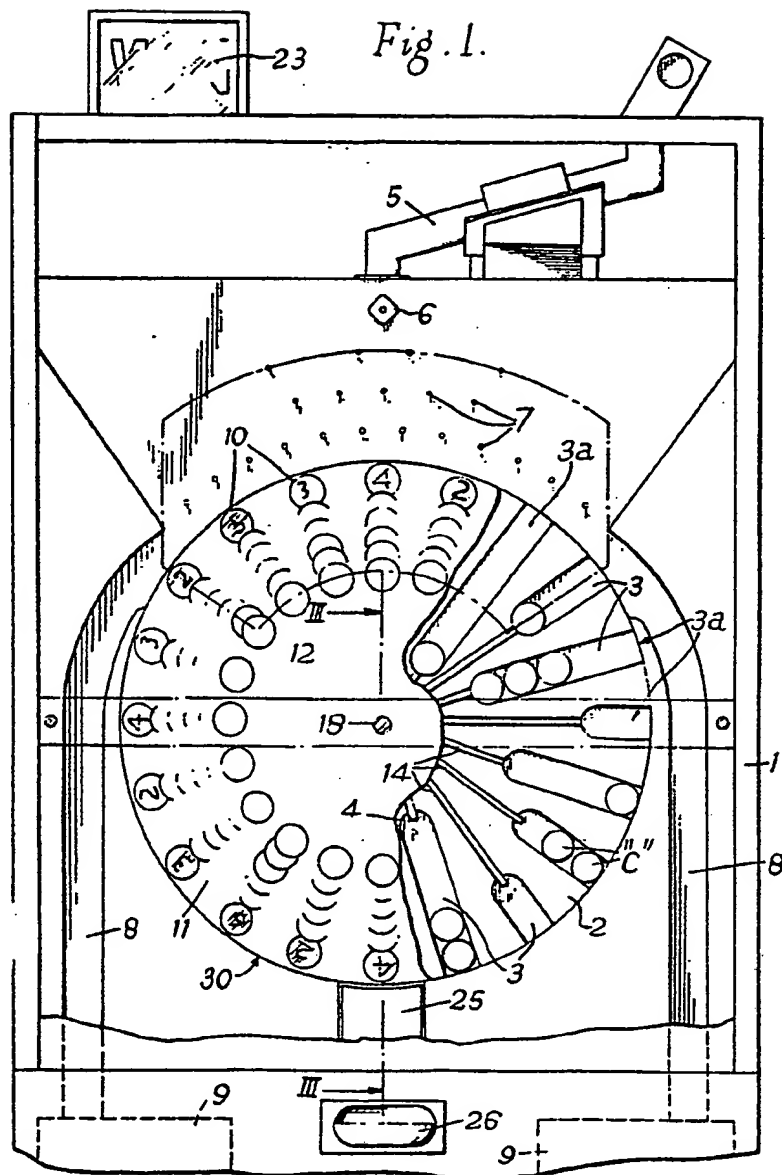
9. Apparatus according to claim 6 or 7 wherein said rods are adapted to co-act successively with a second spring loaded blade for closing contacts for illuminating a "Win" sign.

10. An amusement apparatus constructed

substantially as hereinbefore described with reference to and as illustrated by the accompanying drawings.

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4 SHEETS

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Sheets 1 & 2

Fig. 2.

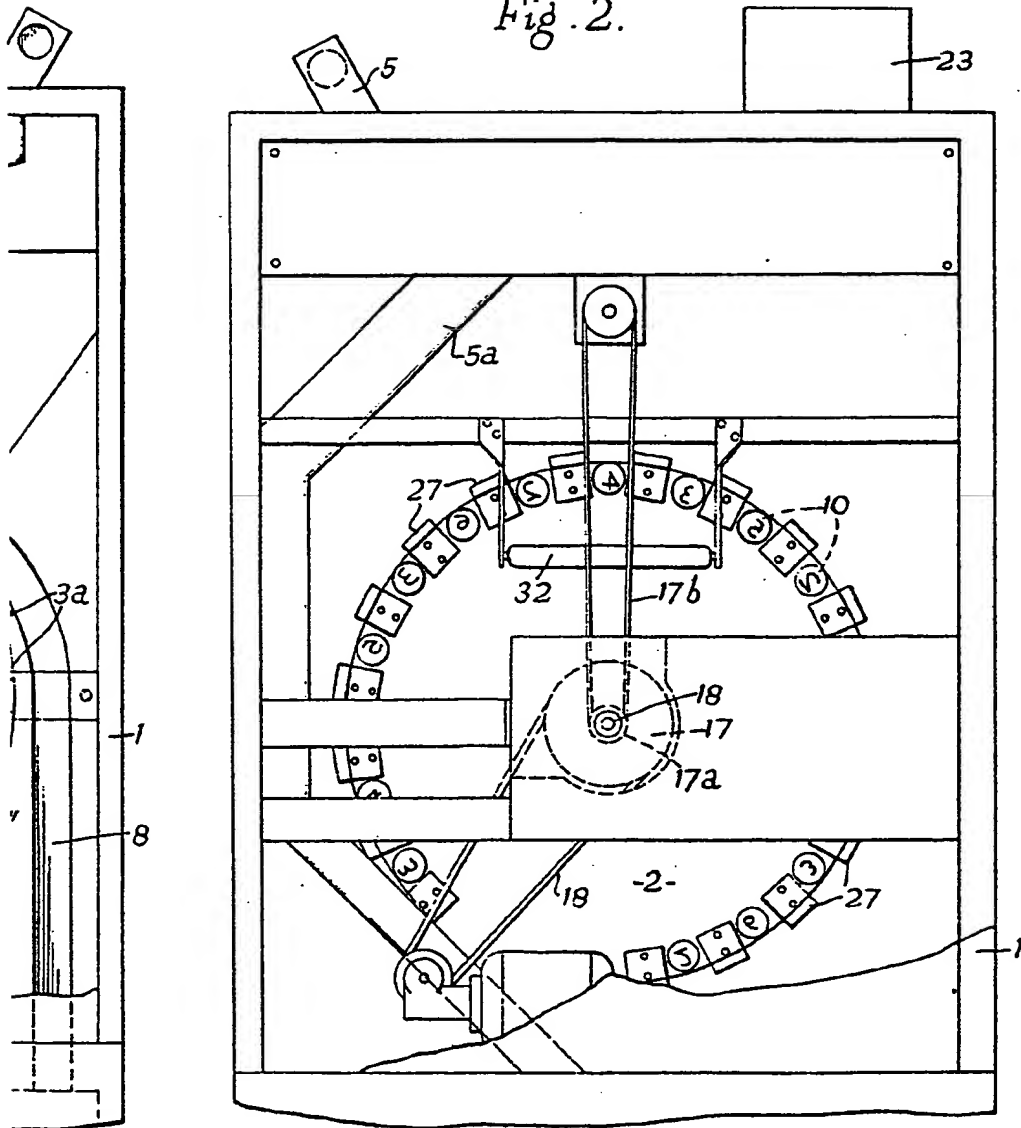


Fig. 1.

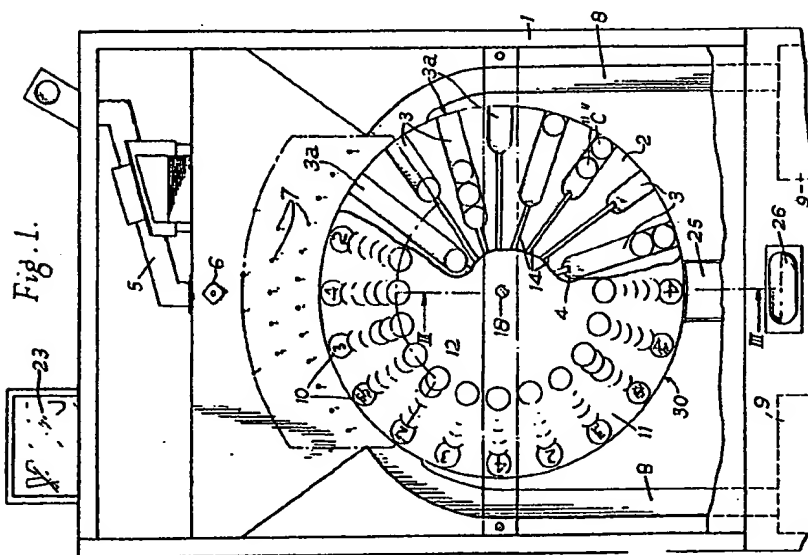


Fig. 2.

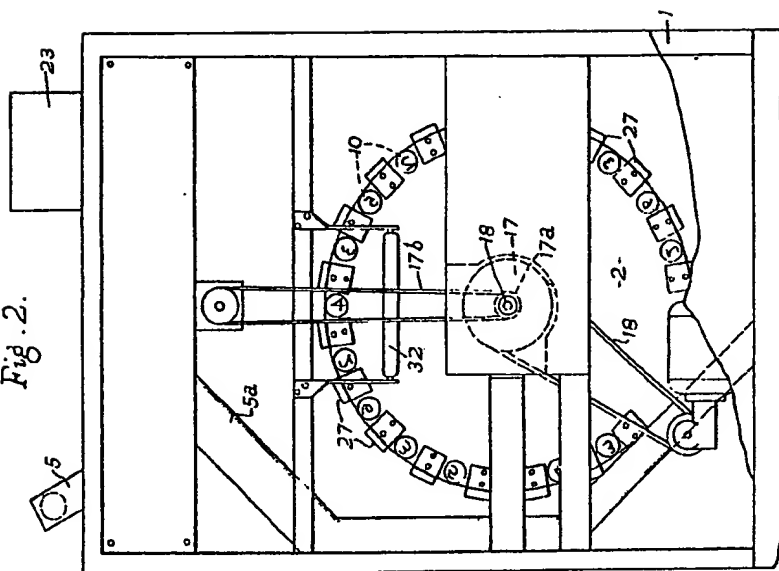
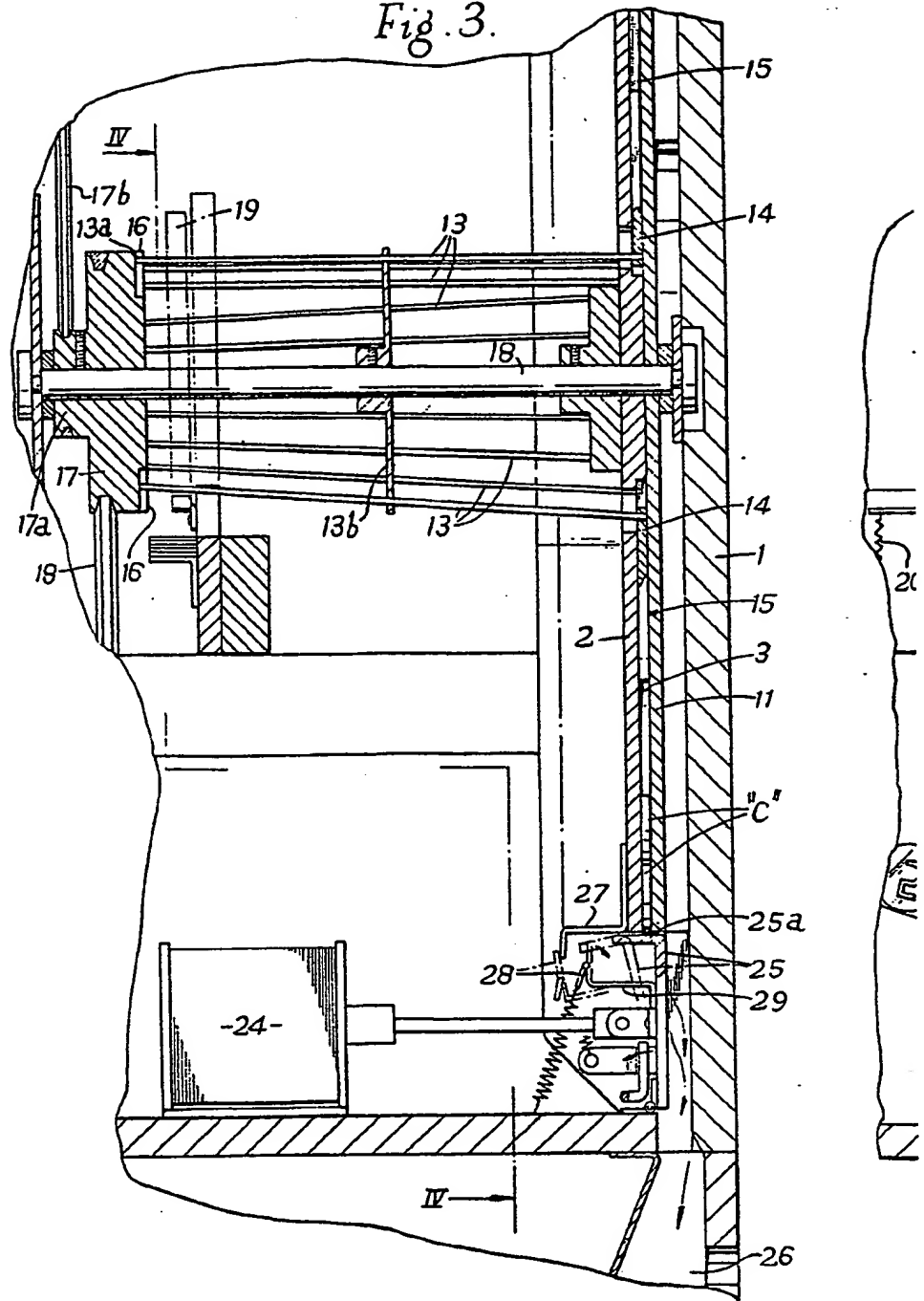


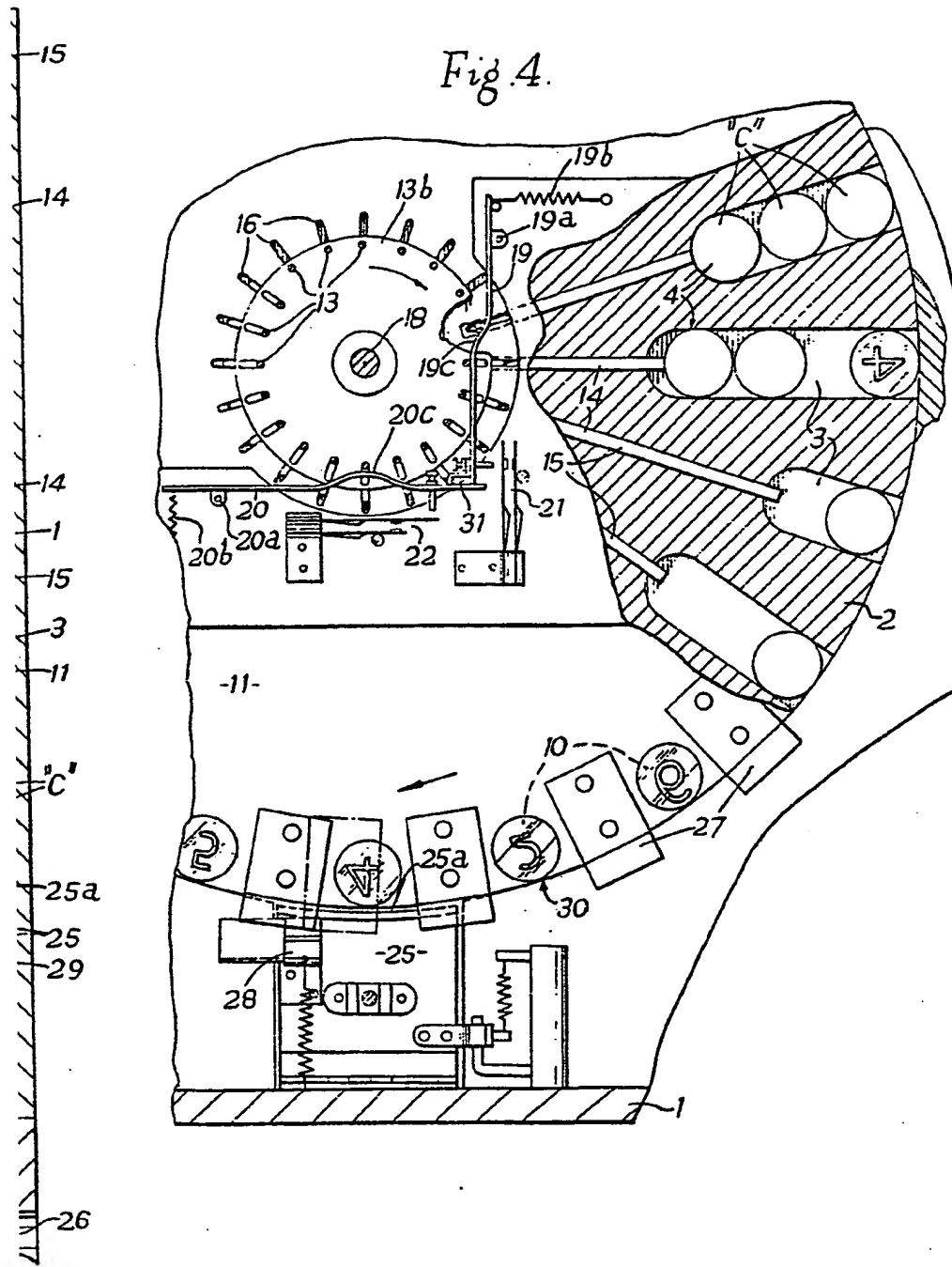
Fig. 3.

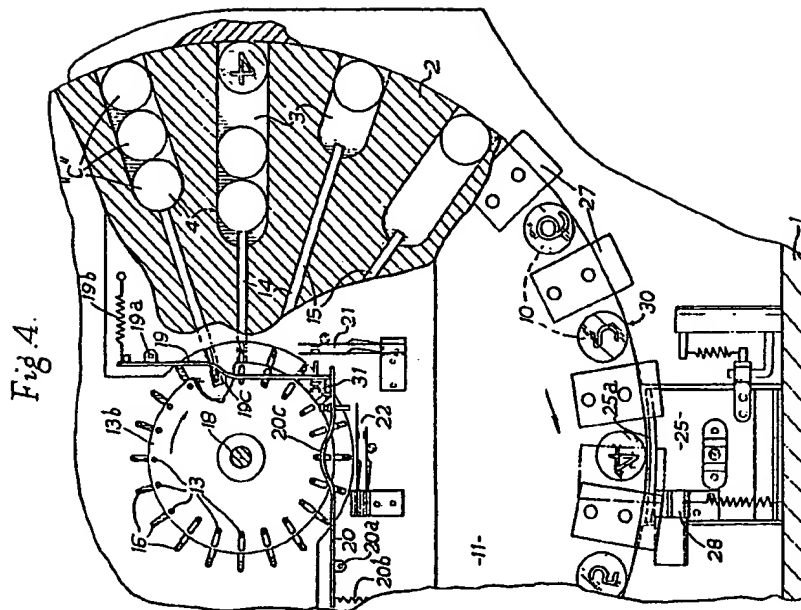
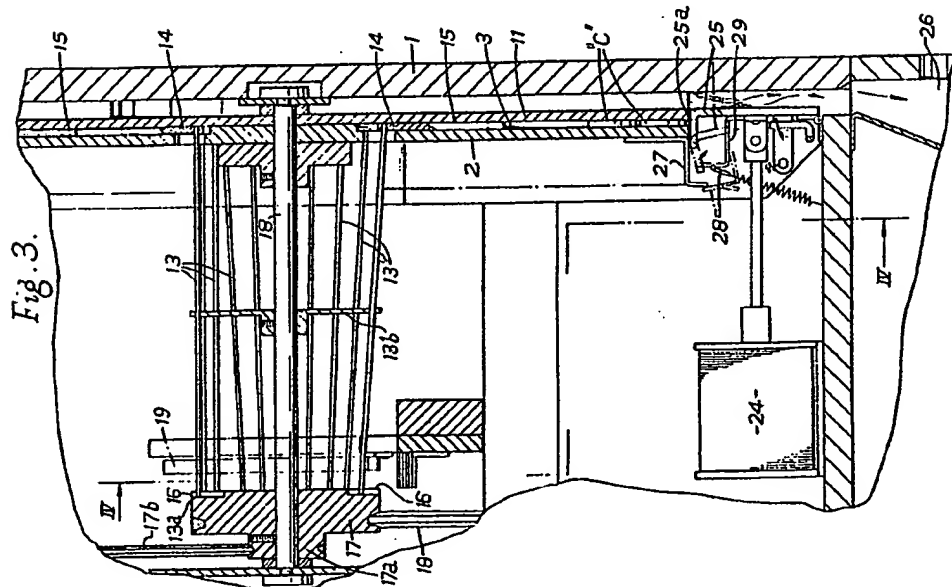


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Fig.4.





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